

Total Solar Irradiance Increase into Solar Cycle 23

Claus Fröhlich

Physikalisch-Meteorologisches Observatorium Davos

World Radiation Center

CH-7260 Davos Dorf, Switzerland

Total solar irradiance (*TSI*) observations show a very short solar minimum in early 1996. The increase of *TSI* starts well before those of other activity parameters such as the magnetic field or the MgII index. Thus the onset of solar cycle 23 seems to be quite different from the last one in 1987. Models based on PSI and MgII-Index are unable to explain this behaviour whereas they accounted for over 90% of the variance over the period of the minimum in the 1985-87 time frame followed by the increase into cycle 22. Possible explanations for this behaviour are proposed.